Preterm Birth

Nebraska PRAMS

November 2014

PRAMS' goal is to have Healthier Moms and Babies in Nebraska.

Information from PRAMS informs us about the risks of preterm birth for prevention planning.

What is Preterm Birth?

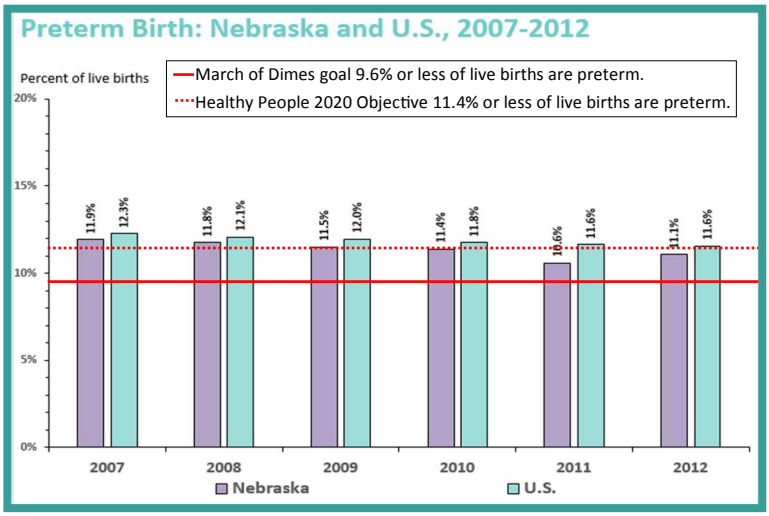
Preterm birth is the birth of an infant prior to 37 completed weeks of gestation (full term is 40 weeks) and is one of the leading causes of illness and death among newborns in the United States.[1] Preterm birth is the leading cause of neonatal death, and is associated with birth defects and long term health problems. The earlier a baby is born, the more severe his or her health problems are likely to be. More infants die from preterm-related problems than from any other single cause. Some premature babies require special care and spend weeks or months hospitalized in a neonatal intensive care unit (NICU). Those who survive may face lifelong problems such as—

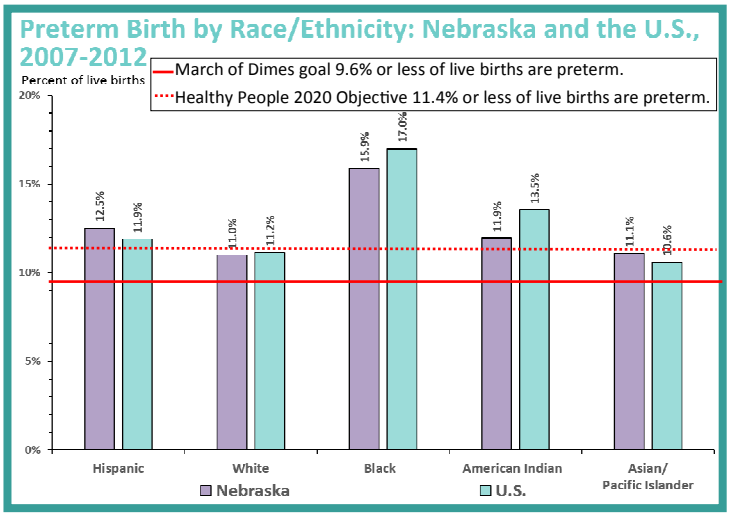
- Breathing problems
- Feeding difficulties
- Cerebral palsy
- Developmental delay
- Vision problems
- Hearing Impairment[2]

Preterm birth not only impacts the national economy due to healthcare and education costs, but also increases the financial and emotional stress on the families and caregivers of the infants. All these issues can cause depression and ill health for caregivers.[3]

The National Healthy People 2020 Objective related to prematurity is to reduce total preterm births to no more than 11.4% of live births. The March of Dimes 2020 Goal is to reduce preterm births to no more than 9.6% of live births.

The exact causes of preterm labor and/or birth are often unknown. Any woman can have preterm labor and give birth early, even if she's done everything right during pregnancy. Some women are more likely than others to have preterm labor and birth due to risk factors. Having a risk factor doesn't mean she will definitely have a preterm labor or give birth early, but it does increase her chances.[4]





National Center for Health Statistics, Natality public-use data 2007-2012. http://wonder.cdc.gov/natality-current.html; accessed 9/17/2014

What is Nebraska PRAMS?

The Nebraska Pregnancy Risk Assessment Monitoring System is an ongoing, population-based surveillance system of maternal behaviors and experiences before, during, and shortly after pregnancy. PRAMS provides data that are representative of all women giving birth in Nebraska as well as for their newborns.

Characteristics of Nebraska Mothers

Nebraska PRAMS, 2009-2011

	Percent of the Population	Percent with Term Births	Percent with Preterm Births (less than 37 wks)
White	73.6	91.9	8.1
Black	6.3	88.9	11.1
Native American	2.6	89.7	10.3
Asian/Pacific Islander	2.6	92.0	8.0
Hispanic*	15.0	91.3	8.7
Single birth	98.3	92.6	7.4
Multiple birth	1.7	32.8	67.2
Married	67.0	92.1	7.9
Not Married	33.0	90.6	9.4
Income <$15,000	24	90.5	9.5
Income $15,000 or more	76	92.2	7.8
Income below 185% of FPL**	45.6	91.4	8.6
Income at or greater than 185% of FPL	54.4	92.1	7.9
0-11 years of education	33.8	93.1	6.9
12 years of education	32.5	91.1	8.9
13-15 years of education	19.5	89.3	10.7
16 or more years of education	14.2	92.2	7.8
<20 years	7.0	90.3	9.7
20-24 years	22.4	91.6	8.4
25-29 years	34.1	92.6	7.4
30-34 years	25.0	91.6	8.4
35-39 years	9.7	89.0	11.0
>=40 years	1.7	93.0	7.0

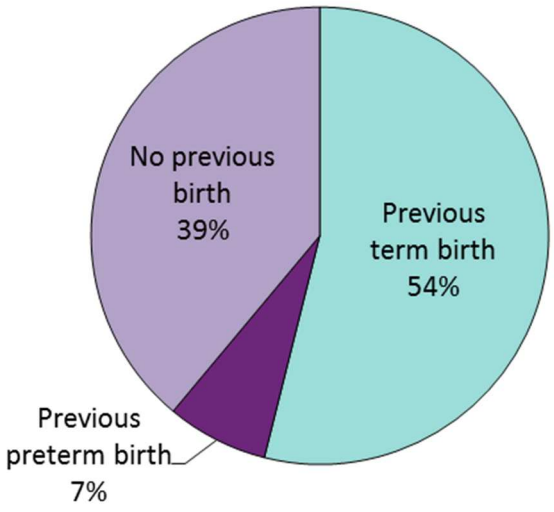
*Hispanics can be of any race.
**Federal Poverty Level

Income and number of dependents, as reported by PRAMS respondents, can be used to calculate poverty status relative to federal poverty guidelines (available at http://aspe.hhs.gov/POVERTY/figures-fed-reg.shtml. If the midpoint of the mother's reported income category falls below 185% of the guideline for her reported number of dependents, she is eligible for a variety of programs.

Having had a preterm birth is the strongest predictor of having another preterm birth.

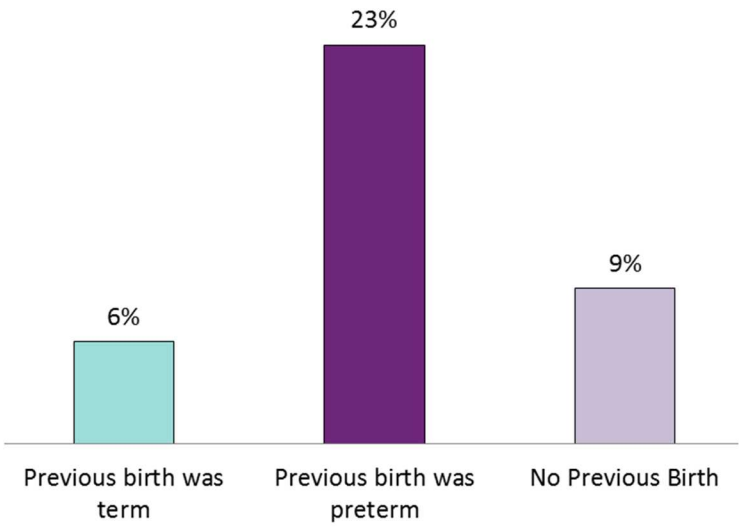
Pregnancy History of PRAMS Respondents

Nebraska PRAMS, 2009-2011



Preterm Births, by Pregnancy History

Nebraska PRAMS, 2009-2011



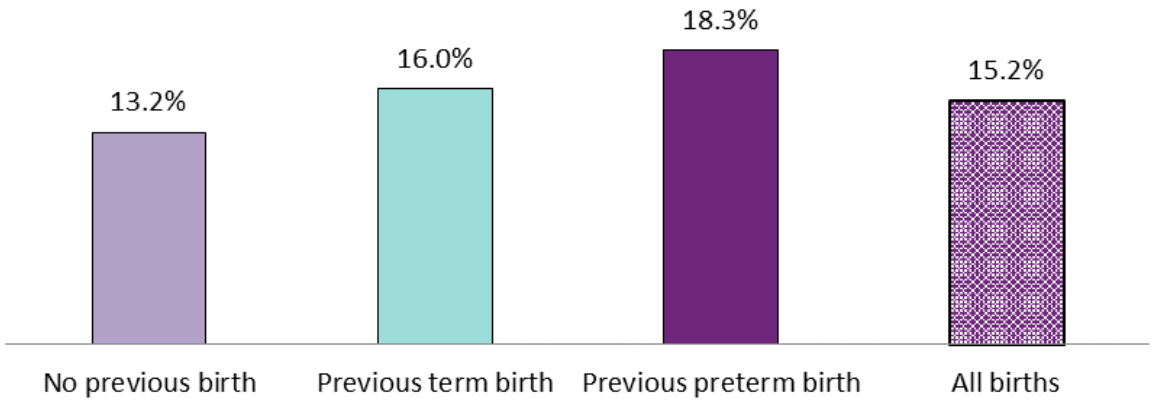
p<.0001 for the difference across groups.

Women whose most recent previous birth was preterm are **three times more likely to have a preterm birth** than women with previous term births.

Women with a previous preterm birth should discuss their higher risk status with their medical providers. They may benefit from pre-pregnancy ("interconception") care to reduce their risk of preterm birth in the next pregnancy, and should receive early prenatal care for any subsequent pregnancies. Women should get prenatal care as soon as they think they are pregnant and throughout their pregnancy.[1]

Percent of Women Receiving First Prenatal Care Appointment at 13 or More Weeks, or Never, by Pregnancy History

Nebraska PRAMS, 2009-2011



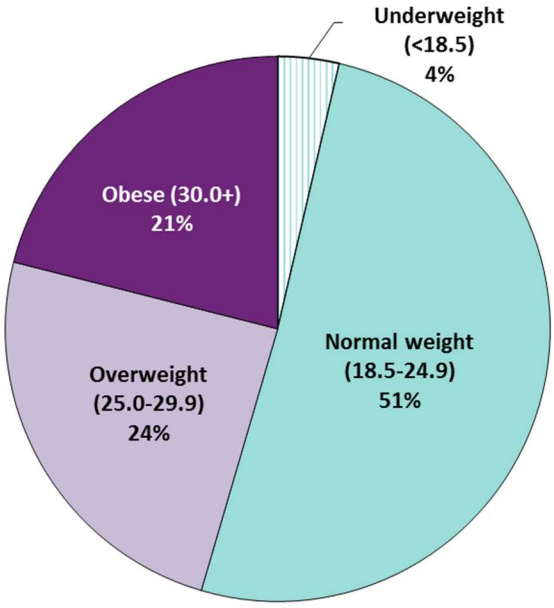
p<.0001 for comparison across groups.

Prenatal care provides an opportunity to screen a woman for her pregnancy history and, if appropriate, for cervical length. Women with a previous preterm birth or cervical length less than 20 mm between 16-20 weeks gestation can reduce their risk of delivering preterm by using progesterone or synthetic progestins.[5]

Risk factors for preterm birth, such as overweight, hypertension, and diabetes are increasing among Nebraska mothers.

Pre-Pregnancy Body Mass Index

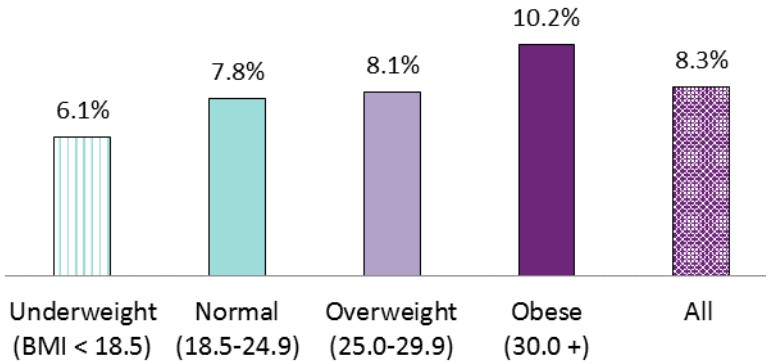
Nebraska PRAMS, 2009-2011



Nearly half of all Nebraska mothers were overweight (24%; BMI ≥ 25) or obese (21%; BMI ≥ 30) as they entered pregnancy. **Obesity increases the risk of hypertension, diabetes and other health problems, and increases the risk of preterm birth.**

Preterm Births, by Maternal Body Mass Index

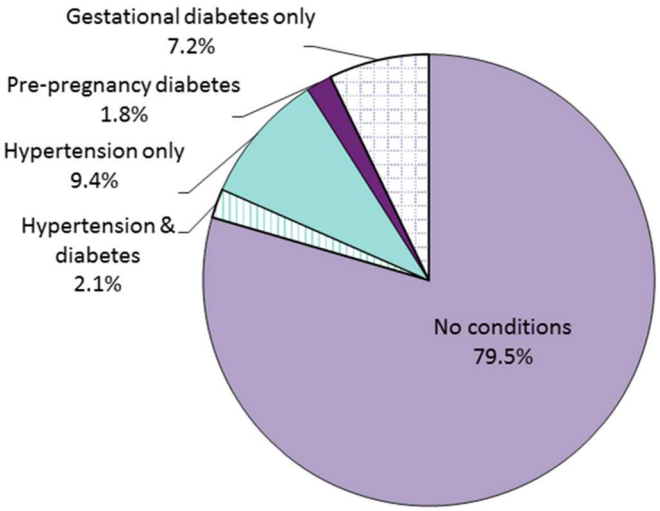
Nebraska PRAMS, 2009-2011



The increased risk of preterm birth for obese women (21% of new mothers) compared to overweight women (24% of new mothers) represents an estimated 110 preterm births per year that could be avoided. **The risk of preterm delivery among obese mothers is significantly increased when compared to all other mothers (p=.037)**.

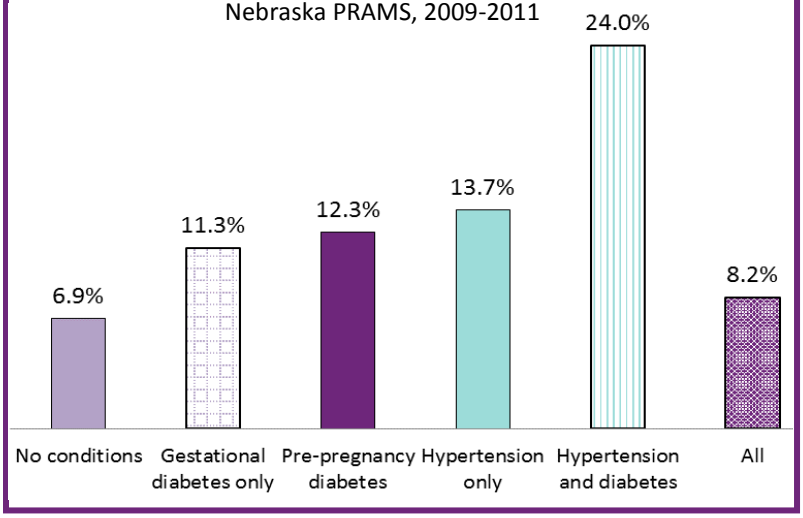
Prevalence of Diabetes and Hypertension

Nebraska PRAMS, 2009-2011



Risk of Preterm Birth, by Diabetes & Hypertension Status

Nebraska PRAMS, 2009-2011



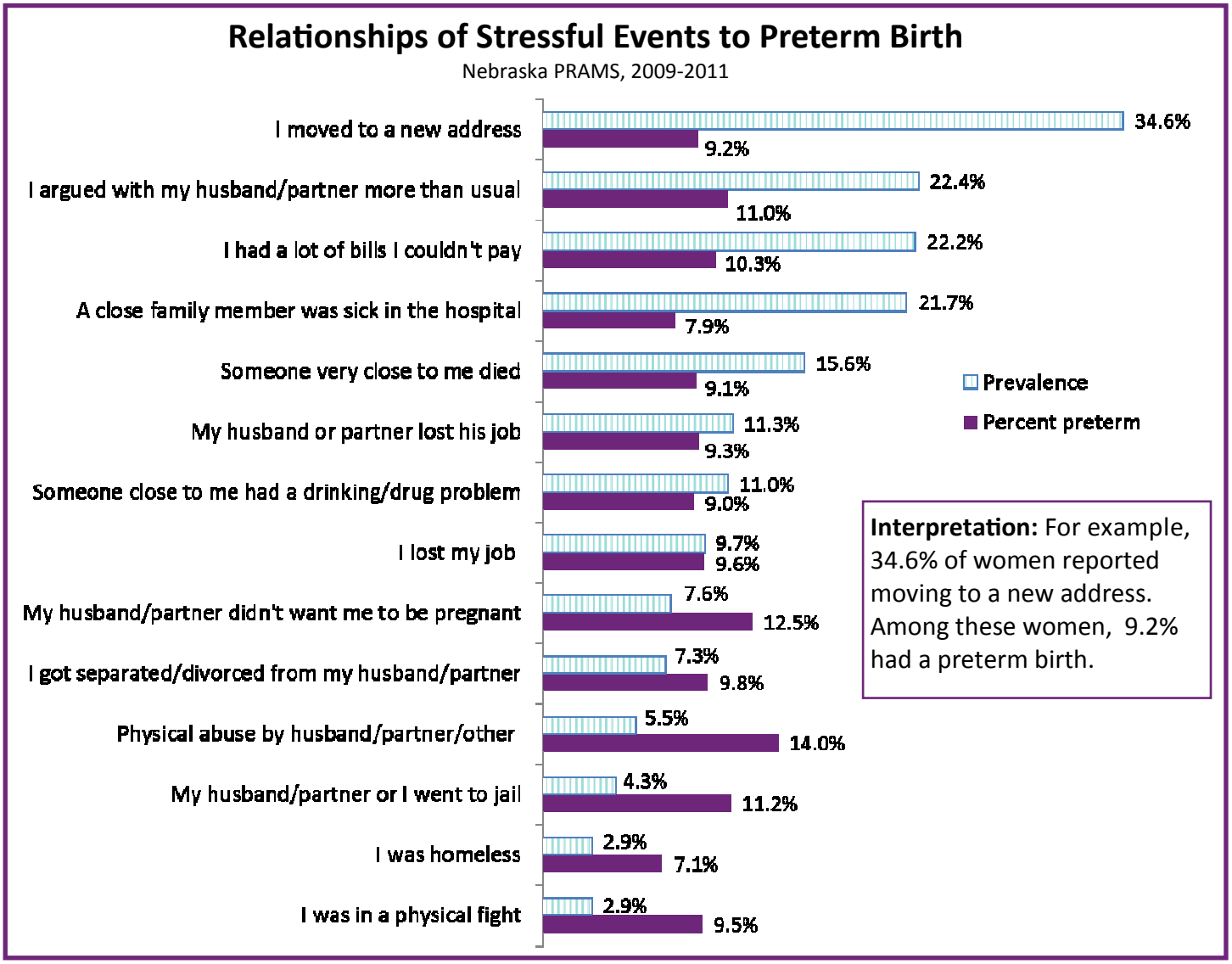
Diabetes before or during pregnancy, and hypertension during pregnancy (including pre-eclampsia), significantly increase the risk of preterm birth. The conditions are more likely to occur to women who are overweight or obese.

Stressful life events may increase the risk of preterm birth.

Nebraska PRAMS asks mothers whether they have experienced certain stressful circumstances during the 12 months before their babies were born. **The most common circumstances (reported by more than one out of five women) were:**

- Moving to a new address
- Arguing with their husband/partner more than usual
- Having a lot of bills she was unable to pay
- Having a close family member who was very ill.

The following graph display those stressful circumstances, their prevalence, and their relationship to preterm birth.



Mothers' stressful life events that are associated with an increased risk of preterm birth:

- Being physically abused before or during the pregnancy
- Having her husband or partner say he didn't want her to be pregnant

Recommendations for reducing preterm birth.

- The risk of maternal and infant mortality and pregnancy-related complications can be reduced by increasing access to quality preconception (before pregnancy) and interconception (between pregnancies) care.[1]
- Premature birth prevention and risk reduction strategies include eliminating early elective deliveries before 39 weeks of pregnancy, birth spacing of eighteen to 23 months between pregnancies, helping women quit smoking, offering low-dose aspirin to women with high-risk pregnancies to prevent preeclampsia, offering progesterone treatment to women with a history of preterm birth, and reducing multiple births from fertility treatment.[6]

Additional Resources:

- www.cdc.gov/Features/PrematureBirth/
- www.cdc.gov/reproductivehealth/MaternalInfantHealth/PDF/PretermBirth-Infographic.pdf
- http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/PretermCDC-Activities.html
- http://www.nichd.nih.gov/health/topics/preterm/resources/Pages/providers.aspx
- https://www.awhonn.org/awhonn/content.do?name=02_PracticeResources/2C3_Focus_NearTermInfant.htm
- http://www.minoritynurse.com/article/preventing-premature-birth-disparities
- http://cherg.org/projects/birth_spacing.html
- http://www.webmd.com/baby/news/20060418/pregnancy-spacing-affects-outcome
- http://www.mayoclinic.org/healthy-living/getting-pregnant/in-depth/family-planning/art-20044072
- http://www.marchofdimes.org/professionals/medical-resources.aspx

What is Nebraska PRAMS?

The Nebraska Pregnancy Risk Assessment Monitoring System is an ongoing population-based surveillance system of maternal behaviors and experiences before, during, and shortly after pregnancy. Nebraska PRAMS is a joint research project between the Nebraska Department of Health and Human Services and the United States Centers for Disease Control and Prevention (CDC). The data presented in this publication are based on 5,362 completed surveys representing Nebraska mothers who gave birth to live infants during 2009 through 2011.

www.dhhs.ne.gov

References:

1. Centers for Disease Control and Prevention. 2014. Preterm Birth. Available at cdc.gov/reproductivehealth/MaternalInfantHealth/PretermBirth.htm.
2. Centers for Disease Control and Prevention. 2013. What is Preterm Birth? Available at cdc.gov/Features/PrematureBirth/.
3. Hodek JM, von der Schulenburg J-M, Mittendorf T. 2011. Measuring economic consequences of preterm birth. *Health Economics Review* 1:6. Available at healtheconomicsreview.com/content/1/1/6.
4. March of Dimes. 2013. Preterm labor and birth. Available at marchofdimes.com/pregnancy/print/preterm-labor-and-birth.html.
5. Iams JD. 2014. Identification of Candidates for Progesterone - Why, Who, How, and When? *Obstetrics and Gynecology* 123:1317–26.
6. March of Dimes sets 2030 goal to reduce US preterm birth rates. 2014. McCabe ERB. *Pediatrics*. 2014;doi:10.1542/peds.2014-2541.

All web documents were accessible as of 11/7/2014.

Completed in collaboration with the kind assistance of:

Debora Barnes-Josiah, Carol Gilbert, Kathy Karsting, Lora Langley, Mary Larsen, Meghan Malik, Michaela Meismer, Allison Miles, Jackie Moline, Julie Rother, Jennifer Severe-Oforah, Shannon Vanderheiden, Jane Ford Witthoff, Heather Younger, Brenda Coufal and the Centers for Disease Control and Prevention (CDC).